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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/124,288	07/28/1998	JENS BARRENSCHEEN	GR-98-P-2078	6541

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EXAMINER

WINDER, PATRICE L

ART UNIT	PAPER NUMBER
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2155

15

DATE MAILED: 03/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/124,288

Applicant(s)

BARRENSCHEEN ET AL.

Examiner

Patrice L Winder

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-26 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 12 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 7-11, 13-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4, 6, 12, 19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Leger, U.S. Patent No. 5,732,286 (hereafter referred to as Leger).
3. As to claim 1, Leger taught in a data transmission system with at least two subscribers (host CPU 101 and several external devices, col. 4, lines 48-57), a memory device to be connected (RAM based FIFO 208 of peripheral hardware controller 103, col.6, lines 1-6), for serial data transfer of binary data objects of a predetermined data width (serial data transfer of packets, col. 1, lines 52-54, composed of entities, col. 5, lines 57-58), between the at least two subscribers (serial I/O between the host CPU and the external devices, col. 5, lines 1-2), comprising:

a multiplicity of memory objects (RAM based FIFO 208 composed of 32- entity wide memory slots, col. 10, lines 27-30);

each said memory object having a data width being at least as large as a predetermined data width of a data object intended for data transfer (FIFO width = size of entity, col. 5, lines 60-62);

at least one FIFO structure containing a plurality of said memory objects (RAM based FIFO, col. 6, lines 1-6) and transmitting data in a data-controlled data transfer controlled by the data objects being transmitted (data transfer controlled by monitoring marking tags of data packets, i.e. data controlled data transfer, col. 6, lines 32-33, col. 7, lines 48-53, 25-34).

4. As to dependent claim 2, Leger taught wherein said memory objects are equal in size (width of the FIFO for the 32 byte depth is the size of an entity, col. 5, lines 62-65).

5. As to dependent claim 4, Leger taught wherein each of the subscribers is adapted to be a data transmitter and a data receiver (Inherent, the peripheral hardware controller controls data flows between the CPU system bus and external I/O devices. With respect to the external devices the peripheral hardware controller buffers data transmitted to and received from the serial I/O channels, col. 5, lines 1-7, i.e. the devices connected on either side of the peripheral controller are adapted to send and receive, col. 5, lines 35-44).

6. As to dependent claim 6, Leger taught wherein each of said FIFO structures has a data-controlled FIFO fill-level register indicating how many of said memory objects in said FIFO structure have already been written to and/or which are empty (up-down counter 703, col. 7, lines 48-53, 63-65).

7. As to dependent claim 12, Leger taught a method of operating the memory device which comprises:

defining a first operating mode wherein the following method steps are performed (first operating mode = external device is a sender and the host CPU is a receiver):

- (a) providing a FIFO structure (RAM based receive FIFO);
- (b) defining the first subscriber as a data transmitter and successively writing, with the data transmitter, a plurality of data objects to successively arranged memory objects in the FIFO structure (packets 0-4 are successively written to the FIFO, see fig. 6, col. 6, lines 51-53);
- (c) repeating the writing step until all the memory objects in the FIFO structure have been written to or all the data objects intended for data transfer have been stored in respective memory objects in the FIFO structure (writing = receiving packets into the FIFO until the entire FIFO depth is full, col. 5, lines 65-67);
- (d) releasing the FIFO structure for a read operation (signaling the transmitting device to stop transmitting, col. 7, lines 25-30); and
- (e) defining the second subscriber as a data receiver reading, with the data receiver, the data objects that have just been written to the respective memory objects in the FIFO structure (when the receive FIFO is full, i.e. the host CPU has been defined as the receiver, col. 6, line 65 - col. 7, line 3, lines 12-17), in a same sequence as they were written in the writing step (Inherent, by definition a FIFO is data transfer device where the first object in is the first object out. Hence, the name first in first out (FIFO)).

8. As to dependent claim 19, Leger taught a method which comprises holding off with reading the memory objects that have been written to until after a request signal from a central processing unit or from the data receiver (request signal = number of free system memory buffers, col. 7, lines 15-19, col. 8, lines 22-25).

9. As to dependent claim 21, Leger taught wherein the first subscriber is a central processing unit (host CPU 101, col. 4, lines 48-50) and the second subscriber is coupled to a data bus of a bus system (the actual external devices are connected to the corresponding external interface, col. 4, lines 53-57).

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code 103 not included in this action can be found in a prior Office action.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leger.

12. As to dependent claim 3, Leger's invention does not specifically teach wherein the subscribers in the data transmission system are operated at mutually different data transmission rates. However, Leger taught subscribers in the data transmission system are operated at mutually different data transmission rates (FIFOs are used to buffer time independent transmitters and receivers, i.e. subscribers, col. 1, lines 20-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating subscribers operated at mutually different transmission rates would improved the usability of Leger's system. The motivation would have been to provide another application in its field of use.

13. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leger in view of Parks et al., U.S. Patent No. 5,623,700 (hereafter referred to as Parks).

14. As to dependent claim 20, Leger taught the at least two subscribers are bus systems and the memory device is connected between the subscribers (RAM based

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FIFO memory connects CPU system interface bus 104 with the bus systems of the external devices, such as the bus system of the SCSI interface, col. 4, lines 46-57).

Leger does not specifically teach wherein the memory device is integrated in a bridge module. However, Parks taught a memory device is integrated in a bridge module (taught a bus bridge module within a peripheral controller connecting a host processor to external devices, col. 7, lines 38-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made that substituting Parks' bridge module for Leger's peripheral controller would have been an equivalent substitution. The motivation would have been Parks' bridge module forms an interface between a SCSI device and a host computer through its system bus likewise does Leger's peripheral controller.

15. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leger in view of Gotze et al., U.S. Patent No. 5,941,966 (hereafter referred to as Gotze).

16. As to dependent claim 22, Leger taught a bus system comprising at least one memory device according to claim 1 (see claim 1 above). Leger does not specifically teach the bus system is a CAN bus system. However, Gotze taught a CAN bus system comprising a FIFO memory device (col. 4, lines 8-18, col. 5, lines 27-32). It would have been obvious to one of ordinary skill in the art that substituting Gotze's CAN bus system for Leger's bus system would have increased system usability. The motivation would have been to increase the available fields of use for Leger's controller.

Allowable Subject Matter

17. Claims 5, 7-11, 13-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. Claims 23-26 are allowed.

19. The following is an examiner's statement of reasons for allowance:

Claims 23-26 are allowable over the prior art of record for the reasons cited in the office action mailed on April 12, 2000, paper #6.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

20. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

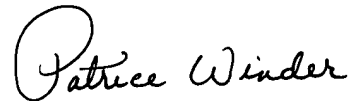
21. Applicant's arguments filed January 25, 2001 have been fully considered but they are not persuasive. Upon review of applicant's argument as to why amended claim 1 is allowable, see page 6 of paper #10, the examiner fails to see correlation between the statements of reasons for allowance given in item #22 of the office action mailed on April 12, 2000, paper #6. Also, applicant has not provided any arguments as to why the new limitations render the claims allowable over the prior art of record.

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22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrice Winder whose telephone number is (703) 305-3938. The examiner can normally be reached on Monday-Friday from 10:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh, can be reached on (703) 305-9648. The fax phone number(s) for this Group are after final (703) 746-7238; official (703) 746-7239 and non-official/draft (703) 746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.


PATRICE WINDER
PRIMARY EXAMINER